AMENDED CLAIMS – SUBMITTED EXCLUSIVELY TO INCREASE THE CLARITY OF THE CLAIMS

037 What is claimed is:

1. A method for maintaining a desired flue parameter concentration (delete level) as a byproduct of combustion at the burners of a multiburner furnace with or without an independent oxidant flow rate within a predetermined range of said sequential (delete values) flue parameter concentrations having an upper limit and a lower limit so as to deliver an appropriate oxidant flow rate through variably opening solenoid valves to a combustant at (delete the) said burners of said multiburner furnace to increase efficiency and decrease pollution, said method being adapted for use with an Automatic Furnace including an electronic control unit (ECU) having memory, said multiburner furnace having a flue, a flue parameter concentration sensor, said oxidant delivery system controlled by said ECU for delivering a selected oxidant (delete dose) flow rate to said combustant at said burners of said multiburner furnace to maintain said flue parameter concentration

in a stable base state within a predetermined range of said sequential values having said (delete an) upper limit and said (delete a) lower limit to increase efficiency and decrease pollution, a circulation time referred to as a circulation time delay and current circulation time between said combustion and said flue parameter concentration sensing , a reaction time denoting terminal local maximum or minimum or extreme oxidant delivery at dose selection, said Automatic Furnace having a plurality of said oxidant flow rate levels and consequential said flue parameter concentrations (delete doses) ranging from (delete the) said smallest flue parameter concentration (delete dose) to (delete the) said largest (delete dose) flue parameter concentration, the method also comprising:

delivering the largest oxidant (delete dose) flow rate to said burners and thereby said largest flue parameter (delete dose) concentration as said byproduct to said flue, while repeatedly sequencing through (delete the) said plurality of sequential said flue parameter (delete doses) concentrations beginning with the smallest (delete dose) flue parameter concentration and proceeding to an adjacent (delete dose) flue parameter

concentration in (delete the) said sequence after a predetermined time interval has elapsed until said flue parameter (delete levels) concentrations of said Automatic Furnace attain (delete "s") (delete the) said desired flue parameter range at which point said oxidant (delete dosage) flow rate is selected from said plurality of said sequential oxidant flow rates.

delivering said selected oxidant (delete dose) flow rate so as to maintain said flue parameter concentration (delete level) in (delete its) said desired range.

2. The method of claim 1 wherein CO is said flue parameter.

3. The method of Claim 1 wherein (delete the) said (delete current) circulation time is determined by:

means for storing a predetermined number of said base state values in memory; and

means for determining a predetermined sequence of said base state (delete levels) values.

4. The method of claim 1 wherein said reaction time is determined by logic flow charts.

5. The method of Claim 1 wherein temperature is a said flue parameter.

6. The method of Claim 1 wherein NO is a said flue parameter.

7. The method of Claim 1 wherein compressed gaseous air is a said oxidant.

8. The method of Claim 1 wherein compressed oxygen gas is a said oxidant.

9. The method of Claim 1 wherein said combustant is solid, liquid, or gas.

10. The method of Claim 1 wherein said combustant is a hydrocarbon.

11. A method for maintaining a desired flue parameter level in a multiburner furnace within a predetermined range of sequential

values having an upper limit and a lower limit so as to deliver an appropriate oxidant flow rate to a combustant with or without an independent oxidant flow rate at said burners of a multiburner furnace to increase efficiency and decrease pollution, said method being adapted for use with an Automatic Furnace including an electronic control unit (ECU) having memory, said multiburner furnace, a flue, a flue parameter concentration sensor, an oxidant delivery system controlled by said ECU through variably opening solenoid valves for delivering a selected oxidant ( delete dose) flow rate to said combustant at the burners to maintain said flue parameter concentration within a predetermined range of sequential values having an upper limit and a lower limit in a stable base state, a circulation time referred to as a current circulation time or a circulation time delay between said combustion and said flue parameter sensing, a reaction time denoting said time to select said oxidant (delete doses) flow rates, said Automatic Furnace having a plurality of said oxidant flow rates and said flue parameter (delete doses) concentrations ranging from the smallest flue parameter concentration (delete dose) to the largest (delete dose) flue parameter concentration, the method comprising:

delivering said largest oxidant (delete dose) flow rate to said burner and thereby said largest flue parameter dose as a byproduct to said flue, while repeatedly sequencing through the plurality of said oxidant (delete doses) flow rates beginning with the smallest (delete dose) oxidant flow rate and proceeding to (detete "a") said adjacent (delete dose) oxidant flow rate in the sequence after a predetermined time interval has elapsed until said flue parameter concentration level of said Automatic Furnace attains the desired flue parameter range at which point a corresponding said oxidant (delete dosage) flow rate is selected from said plurality of sequential (delete flue parameter doses) oxidant flow rates.

delivering the selected oxidant flow rate and consequential flue parameter concentration so as to maintain said flue parameter level in its desired range.

12. The method of claim 11 wherein CO is a said flue parameter.

13. The method of Claim 11 wherein said (delete current) circulation time is determined by:

means for storing a predetermined number of said base state values in said memory; and

means for determining a predetermined sequence of said base state (delete levels) values.

14. The method of claim 11 wherein said reaction time is determined by logic flow charts.

15. The method of Claim 11 wherein temperature is a said flue parameter.

16. The method of Claim 11 wherein NO is a said flue parameter.

17. The method of Claim 11 wherein compressed gaseous air is a said oxidant.

18. The method of Claim 11 wherein compressed oxygen gas is a said oxidant.